UPLAND MANAGEMENT

LANDSCAPE LEVEL BEST MANAGEMENT PRACTICES

KIM COUNTS MORGANELLO

WATER RESOURCES AGENT

CLEMSON EXTENSION SERVICE

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ASHLEY COOPER
STORMWATER EDUCATION CONSORTIUM

WHAT EVERY RESIDENT SHOULD KNOW ABOUT STORMWATER PONDS

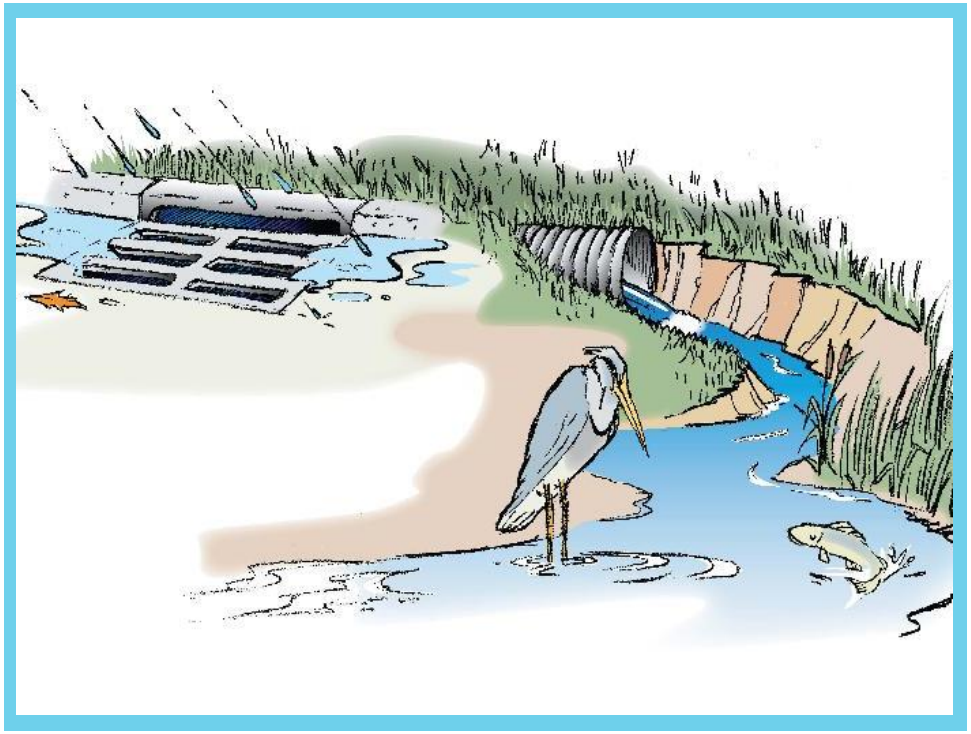
Stormwater Ponds provide critical services:

-SW Ponds **prevent flooding** by suppressing surges of stormwater runoff from houses, driveways, cars, etc

-SW Ponds **protect water quality** by holding water long enough to allow gravity and other processes to remove sediment and pollutants from the water before it is discharged to nearby waterways or beaches.

COMMON POND PROBLEMS

- Aquatic weeds
- Shoreline erosion
- Muddy water
- Foul smell
- Fish kills
- Algal blooms
- Surface films & sheens



YARD CARE PRACTICES

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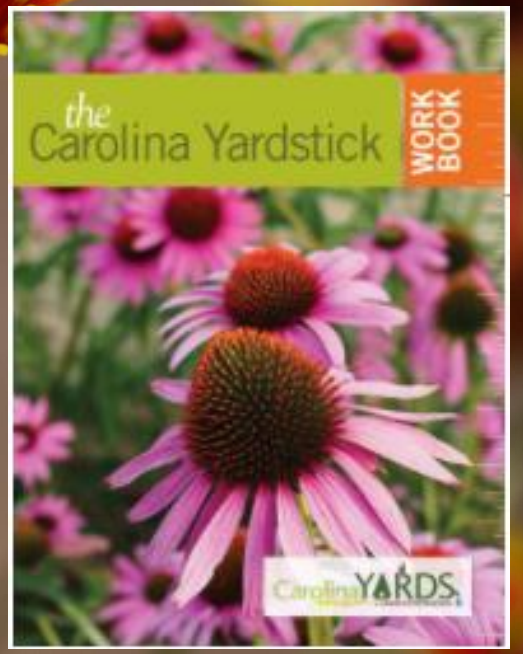
- Maintain Healthy Soils
- Recycle Yard Waste
- Mulch Matters

- Right Plant Right Place
- Water Wisely
- Manage Pests Responsibly

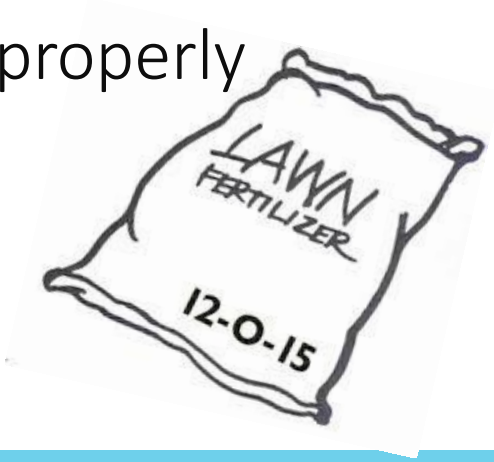


GARDEN LIKE A LOCAL –CONSIDER NATIVE PLANT SPECIES

- Requires little to no irrigation or fertilizers once established
- Support biodiversity & healthy ecosystems
- Combat invasive plant species
- Aesthetically pleasing

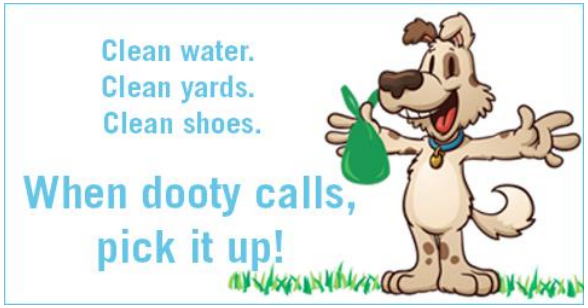
BE WISE WHEN YOU FERTILIZE

- Test soil before applying fertilizer (HGIC 1652)
- Never apply fertilizer on impervious surface
- “Label is the law”
- Look for 0 to low Phosphorus fertilizer
- Always store properly



MANAGE PET WASTE

- Pet waste contains bacteria, viruses and pathogens that can be harmful to human health
- Nutrients in the waste also add to potential algal blooms in ponds
- Response- Install a pet waste station in your community space & encourage responsible pet ownership in yards



RAIN AS A RESOURCE

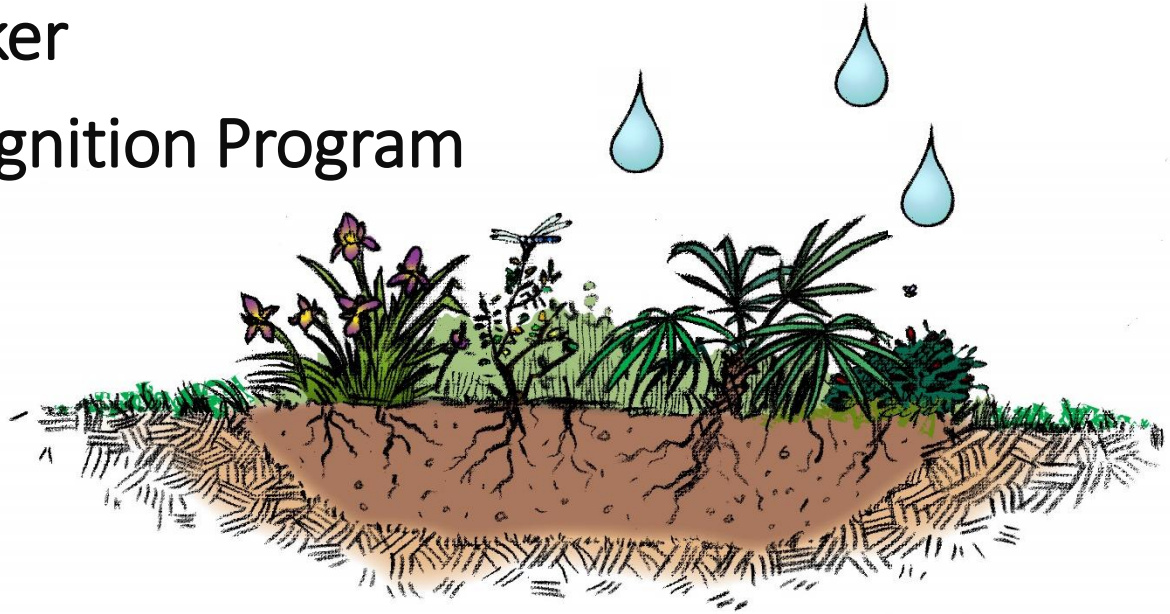
A **rain garden** is a planted depression that allows rainwater runoff from impervious urban areas, like roofs, driveways, walkways, parking lots and compacted lawn areas, the opportunity to be absorbed.

WHY RAIN GARDENS?

- Allow for **collection and infiltration** of stormwater runoff (reducing quantity)
- **Manage erosion & moisture control** issues around the home
- **Beautify** the landscape
- Plants and microbes do the work of **pollutant removal** (assisting with water quality issues)
- **Attract desirable wildlife** (birds and butterflies)
- **Water-wise:** A smart way to irrigate

clemson.edu/raingarden

- Virtual Rain Garden
- Demonstration Rain Gardens
- Programs & Workshops
- Rain Garden Tracker
- Professional Recognition Program



RAINWATER HARVESTING

Rainwater harvesting is the age-old practice of collecting rainwater from rooftops and storing it for later use. Benefits include reduce demand on public water supply, reduce stormwater runoff, assist with erosion and flooding issues and water collected can be used for irrigation

RAINWATER HARVESTING POTENTIAL

During a one inch rainfall, a 1000 square foot roof can yield over 600 gallons of water.

Multiple square footage of roof area by .623 to find out how much water your roof will yield in a 1 inch rainfall.

Use the water that you capture!

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http://www.clemson.edu/extension/hgic

HGIC 1728 1-888-656-9988

HOME & GARDEN INFORMATION CENTER

Best Practices for Application of Harvested Rainwater on Edibles

The ancient practice of rainwater harvesting is widely used throughout the world and is gaining popularity in commercial and residential applications in the United States. Rainwater harvesting is the collection and storage of rainwater from impervious surfaces, typically a roof area, for use at a later time. Rainwater harvesting systems can also provide stormwater, erosion and flood control benefits.

Capturing and storing rainwater is a practical water conservation practice due to the sheer volume of water that flows off of roof surfaces during a rain event. For every one-inch of rain and every one-square foot of roof area, the potential exists to capture 0.623 of a gallon of water (Mechell 2010). To put this in perspective, for a one-inch rainfall, 1000 square feet of roof area can capture over 600 gallons of water. This harvested water can be used in non-potable ways including irrigation of landscaped beds, butterfly gardens, container plants, and vegetable and fruit gardens. With additional design considerations, water purification features and cost, a rainwater harvesting system can provide water for flushing toilets, taking showers and even for drinking. The recommendations in this factsheet focus on the more commonly found, non-potable rainwater harvesting systems.

In South Carolina, there is an increased interest in the use of harvested rainwater to irrigate fruits, vegetables, and other edibles. In 2014, as part of the Ashley Cooper Stormwater Education Consortium's rainwater harvesting program evaluation, participants in the Charleston, South Carolina Tri-county area, were asked to indicate the primary use of their rainwater harvesting system. Of the 67 respondents, 43% indicated that watering their vegetable garden and/or edibles was their primary use of harvested rainwater (Wooten et al, 2014 unpublished data).

To ensure human health and safety, additional design, maintenance and application strategies should be employed when utilizing non-potable rainwater harvesting systems to irrigate fruits, vegetables, and other edibles.

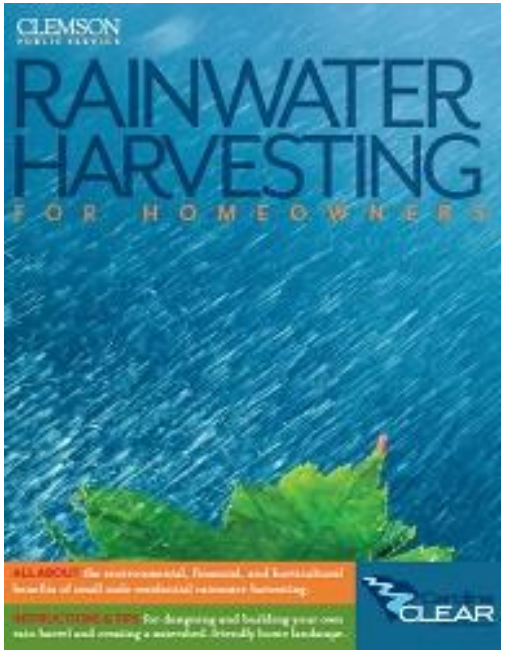
Pollutants, including heavy metals, bacteria, pathogens, herbicides, and pesticides, can accumulate on rooftops and can potentially be transported to the rain barrel or cistern following storm events. The sources of these materials are numerous and include atmospheric deposition, animal waste, roof materials, shingle treatment, and others.

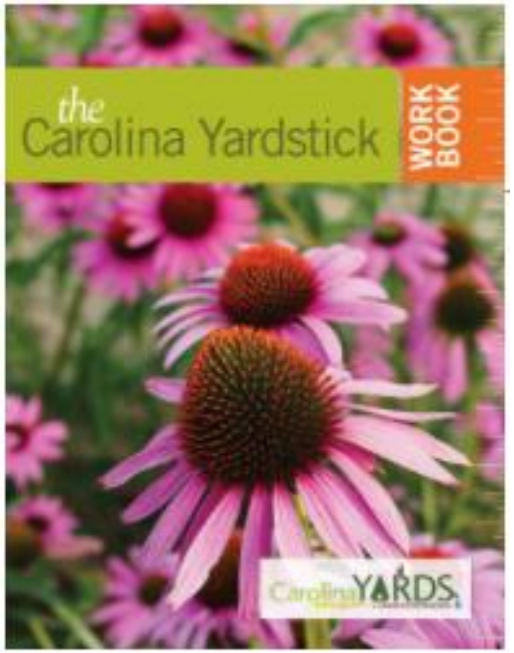
Rainwater Harvesting System Design & Maintenance for Optimal Use on Edibles

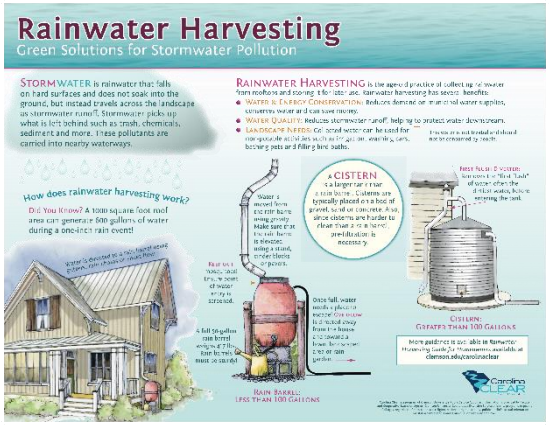
All rainwater harvesting systems are comprised of the following:

a. A *catchment area* (roof) where rainfall is collected;
b. A *conveyance system* (gutters, downspout, rain chain, or sheet flow) which helps to transport water;
c. A *storage system* (rain barrel or cistern), which contains the water for later use.

Though rain barrels and cisterns differ in size and shape, both are rainwater-harvesting systems and the main components remain consistent.







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THANK YOU!

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